

A CO-CATALYST PROTON EXCHANGE MEMBRANE FUEL CELL
UTILIZING BOROHYDRIDE FUELS

ABSTRACT

Two co-catalysts selected from the transitional metals can be employed in proton exchange membrane fuel cells to catalyze a borohydride anolyte, such that diatomic hydrogen produced on the surface of a particle of a first catalyst is diffused to an adjacent surface of a particle of a second catalyst. At the second catalyst the diatomic hydrogen is catalyzed to produce hydrogen ions, which are employed as the mobile ion transported across the electrolyte concurrent with the generation of electrical current. The apparatus operates without the accumulation of hydrogen gas, except as adhered to the surface of the two catalysts.

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